IN THE CLAIMS

1   1. (Currently Amended) A method for designing a system on a target device utilizing
2   a programmable logic device (PLD) with an electronic automation design tool (EDA),
3   comprising:
4   having the EDA tool determine a first location on the PLD to place a user defined
5   logic region in response to user specified constraints for placement of the user defined logic
6   region; ~~and~~
7   having the EDA tool determine a second location to place the user defined logic
8   region, wherein the second location is determined independent of the user specified
9   constraints for placement; and
10   determining routing resources to allocate to user specified signals on the target device
11   in response to user specified routing constraints.

1   2. (Previously Presented) The method of Claim 1, wherein having the EDA tool
2   determine the second location is performed in response to the first location not satisfying
3   design parameters.

1   3. (Previously Presented) The method of Claim 1, wherein having the EDA tool
2   determine the second location is performed in response to the first location not satisfying
3   the user specified constraints.

1   4. (Previously Presented) A method for designing a system on a target device
2   utilizing a programmable logic device (PLD), comprising:
3   determining a first location on the PLD to place a user defined logic region in
4   response to user specified constraints for placement of the user defined logic region; and
5   determining a second location to place the user defined logic region, wherein the
6   second location is determined independent of the user specified constraints for placement in
7   response to having a threshold number of first locations generated.

1   5. (Previously Presented) The method of Claim 1, wherein having the EDA tool
2   determine the second location is performed in response to a triggering event.

1   6. (Previously Presented) The method of Claim 1, further comprising determining
2   positions to place components within user defined logic regions on the target device.

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1   7. (Previously Presented) The method of Claim 6, wherein determining positions to

2 place the components is an iterative procedure that includes:

3   selecting positions;

4   evaluating the positions with a cost function; and

5   accepting the positions if the cost function yields a desired value.

1   8. (Previously Presented) The method of Claim 6, wherein determining the

2 positions comprises removing constraints associated with the user defined logic regions.

1   9. (Cancelled)

1   10. (Currently Amended) The method of Claim 19, wherein determining routing

2 resources is an iterative procedure that includes:

3   selecting routing resources;

4   determining whether routing resource selections satisfy the user specified routing

5 constraints; and

6   re-selecting routing resources if the routing resource selections do not satisfy the user

7 specified routing constraints.

1   11. (Currently Amended) The method of Claim 19, wherein re-selecting the routing

2 resources comprises determining routing resources to allocate to the user specified signals on

3 the PLD by removing the user specified routing constraints.

1   12. (Currently Amended) A method for positioning components of a system onto a

2 target device utilizing a programmable logic device (PLD) using an electronic design

3 automation tool, comprising:

4   having the EDA tool determine a first location on the PLD to place a user defined

5 logic region in response to user specified constraints for placement of the user defined logic

6 region;

7   determining whether the user specified constraint is a soft constraint in response to

8 the system not satisfying timing; and

9   having the EDA tool determine a second location to place the user defined logic

10 region, wherein the second location is determined independent of the user specified

11 constraints for placement if the user specified constraint is a soft constraint, and in response

12 to having a threshold number of first locations determined.

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1   13. (Previously Presented) The method of Claim 12, wherein determining the first

2   location to place the user defined logic region comprises:

3   assigning an initial location for the user defined logic region;

4   moving the user defined logic region to a new location; and

5   evaluating a cost function associated with the user defined logic region in the new

6   location.

1   14. (Original) The method of Claim 13, wherein evaluating the cost function

2   comprises:

3   determining a timing of the system associated with the user defined logic region in the

4   new location; and

5   determining routing resources requirements associated with the user defined logic

6   region in the new location.

1   15. (Previously Presented) The method of Claim 12, further comprising

2   determining possible locations to place a component in the user defined logic region that

3   includes:

4   assigning an initial location for the component in the user defined logic region; and

5   evaluating a cost function as the user defined logic region and the component are

6   moved.

1   16. (Previously Presented) The method of Claim 15, further comprising

2   determining possible locations to move the component from the possible locations to place

3   the component independent of the constraints associated with the user defined logic region.

1   17. (Previously Presented) The method of Claim 16, wherein determining possible

2   locations to move the component is performed in response to the possible locations not

3   satisfying user specified constraints.

1   18. (Cancelled)

1   19. (Currently Amended) A method for designing a system on a programmable logic

2   device (PLD) using an electronic design automation (EDA) tool, comprising:

3   having the EDA tool determine routing strategies for routing signals on the PLD in

4   response to user specified routing constraints that pertain to categories of routing resources

5   to use by selecting routing resources for a user specified signal on the PLDs in response to the

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1   user specified routing constraints, and selecting routing resources for a non-user specified
2   signal on the PLDs without utilizing the user specified routing constraints; and
3   having the EDA tool determine additional routing strategies for routing the signals on
4   the PLD where the additional routing strategies are independent of the user specified routing
5   constraints.

1   20. (Cancelled)

1   21. (Original) The method of Claim 19, wherein determining additional routing
2   strategies for routing the signals comprises selecting routing resources for the user specified
3   signal on the PLDs independent of the user specified routing constraints.

1   22. (Original) The method of Claim 19, wherein determining additional routing
2   strategies for routing the signals is performed in response to the routing strategies not
3   satisfying user specified routing constraints.

1   23. (Original) The method of Claim 19, wherein determining additional routing
2   strategies for routing the signals is performed in response to the routing strategies not
3   satisfying design parameters.

1   24. (Currently Amended) ~~The method of Claim 19, wherein determining additional~~
2   ~~routing strategies for routing the signal is performed~~A method for designing a system on a
3   programmable logic device (PLD) using an electronic design automation (EDA) tool,
4   comprising:
5   having the EDA tool determine routing strategies for routing signals on the PLD in
6   response to user specified routing constraints that pertain to categories of routing resources
7   to use; and
8   having the EDA tool determine additional routing strategies for routing the signals on
9   the PLD where the additional routing strategies are independent of the user specified routing
10   constraints in response to a threshold number of routing strategies being determined.

1   25. (Cancelled)

1   26. (Cancelled)

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1   27. (Cancelled)

1   28. (Previously Presented) A machine-readable medium having stored thereon

2   sequences of instructions, the sequences of instructions including instructions which, when

3   executed by a processor, causes the processor to perform:

4   determining a first location on a programmable logic device (PLD) to place a user

5   defined logic region in response to user specified constraints for placement of the user defined

6   logic region; and

7   determining a second location to place the user defined logic region wherein the

8   second location is determined independent of the user specified constraints for placement in

9   response to having a threshold number of first locations determined.

1   29. (Cancelled)

1   30. (Currently Amended) The machine-readable medium of Claim 28~~5~~, further

2   comprising determining locations to place components within user defined logic regions on

3   the target device.

1   31. (Previously Presented) The machine-readable medium of Claim 30, further

2   comprising determining locations to place the components on the target device by removing

3   constraints associated with the user defined logic regions.

1   32. (Currently Amended) ~~The machine-readable medium of Claim 25, further~~

2   ~~comprising~~A machine-readable medium having stored thereon sequences of instructions, the

3   sequences of instructions including instructions which, when executed by a processor, causes

4   the processor to perform:

5   determining a first location on a programmable logic device (PLD) to place a user

6   defined logic region in response to user specified constraints for placement of the user defined

7   logic region; and

8   determining a second location to place the user defined logic region wherein the

9   second location is determined independent of the user specified constraints for placement;

10   and

11   determining routing resources to allocate to user specified signals on the target device

12   in response to user specified routing constraints.

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1   33. (Previously Presented) The machine-readable medium of Claim 32, further
2   comprising ignoring the user specified routing constraints.

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